REMARKS

Review and reconsideration on the merits are requested.

Applicants appreciate the Examiner acknowledging receipt of certified copies of the priority documents.

The prior art: U.S. 5,011,752 Fife et al (Fife et al); U.S. 2002/0028175 Fife (Fife).

The rejection: claims 1-9 under 35 U.S.C. § 103(a) as being unpatentable over Fife et al in view of Fife.

The Examiner's reading of and the application of the prior art are set forth in the Action and will not be repeated here in detail except as necessary to appreciate Applicants' traversal which is now presented.

Traversal

First, Applicants limit the claims to the sintering of the metal powder being in the metallic container. Basis occurs in the working examples.

Fife et al and Fife disclose methods for sintering a metal powder such as tantalum powder or an oxide powder such as tantalum oxide or niobium oxide with reducing oxygen by a getter material in a furnace under controlled conditions.

In accordance with the present invention, material powder and a getter material are sealed in a container, and the material powder in the container is sintered by heating under pressure.

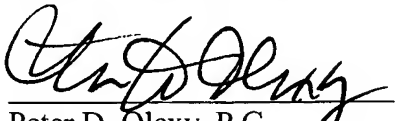
In sintering powder in a furnace following the teaching of Fife et al or Fife, the furnace atmosphere is controlled by reducing pressure or introducing/discharging hydrogen during heating.

In distinction, in the present invention the atmosphere in the container cannot be controlled by reducing pressure or introducing/discharging hydrogen during heating or pressurizing. In order to overcome that aspect or problem, heating and pressurizing conditions are controlled with respect to time. In the first step, the powder in the container is heated at a low temperature (not less than 500°C) and a low pressure (not more than 50 MPa). In this step, the material powder is not densified so that open pores remain. As a consequence, oxygen dissociated from the powder and contained in vaporized oxides is absorbed into the getter material. Thus, oxygen in the powder is reduced. In the second step, temperature and pressure are increased to a temperature of not higher than 1340°C, and a pressure of not more than 50 MPa, so that the powder in the container is sintered into a dense body.

The present invention also relates to a method in which hydride is also sealed into the container with the material powder and the getter material. As a consequence, hydrogen dissociated from the hydride will act as an oxygen carrier. As a consequence, oxygen is more effectively removed from the material powder.

Withdrawal of all rejections and allowance is requested.

Respectfully submitted,



Peter D. Olexy, P.C.
Registration No. 24,513

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

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